

ONLINE STUDENT PERFORMANCE EVALUATION IN SYSTEM-Z MAINFRAME

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## ABSTRACT

Today, the term mainframe can best be used to describe a style of operation, applications and operating system facilities. The z mainframe plays a central role in the daily operations of the world's largest organizations and the daily lives of most people. Nowadays, mostly the system is manual entry into database and use a single entry at a time. There are also unformatted data stored. Thus, this project paper is done to present a design of online student performance evaluation in system-z mainframe where it gives benefit to create automated data entry into the database via COBOL. Besides that, to create a batch type input and output system and to generate a formatted report stored in an independent flat file as output. Furthermore, this project is build to make the recording more efficient, easy to be stored and retrieved from the database. This project design consists of the workflow of the developed system diagrams, logical use case diagram and the example design interfaces itself. This project also reviewed the current system and the existing system that related to online student performance evaluation. Other than that, this project paper reviewed on the current technique on operating system in mainframe which can support thousands of applications and input or output devices to simultaneously serve thousands of users. Generally this system has met its objectives which are to develop "Online Student Performance Evaluation in System-z Mainframe" to make the new systematically. After making a research, analysis, and lastly make a testing to all programs, finally the "Online Student Performance Evaluation in System-z Mainframe" is successfully developed.

## ABSTRAK

Hari ini, kerangka utama boleh digunakan untuk menggambarkan gaya operasi, aplikasi dan kemudahan sistem operasi. Kerangka utama z memainkan peranan utama dalam operasi harian organisasi terbesar di dunia dan kehidupan harian masyarakat. Pada masa kini, sebahagian besar sistem kemasukan adalah secara manual ke dalam pangkalan data dan menggunakan entri tunggal pada satu masa sahaja. Terdapat juga data tidak format disimpan. Oleh itu, kertas projek dilakukan untuk membentangkan reka bentuk penilaian prestasi pelajar dalam talian sistem-z kerangka utama di mana ia memberi manfaat untuk mewujudkan kemasukan data secara automatik ke dalam pangkalan data melalui COBOL. Selain itu, projek ini dibina untuk mewujudkan kelompok jenis input dan output, untuk menghasilkan laporan berformat yang disimpan di dalam fail sebagai output. Disamping itu, projek ini dibina adalah untuk membuat rakaman lebih cekap, mudah untuk disimpan dan dikeluarkan daripada pangkalan data. Reka bentuk projek ini terdiri daripada aliran kerjarajah sistem yang dibangunkan, gambarajah kes penggunaan logik dan contoh reka bentuk antara muka sendiri. Projek ini juga telah mengkaji semula sistem semasa dan sistem sedia ada yang berkaitan dengan penilaian prestasi pelajar dalam talian. Selain daripada itu, terdapat teknik semasa ke atas sistem operasi kerangka utama yang boleh menyokong beribu-ribu pengguna. Pada amnya, sistem ini telah memenuhi ojektif yang membangunkan “Penilaian Prestasi Pelajar Online dalam Kerangka Utama Sistem-z” untuk membuat sistematik baru. Selepas membuat penyelidikan analisis, dan akhir sekali membuat ujian kepada semua program, akhirnya “Pelajar Online Penilaian Prestasi Sistem-z Kerangka Utama” berjaya dibangunkan.

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## CHAPTER 1

### INTRODUCTION

This chapter briefly discuss on the overview of this research. It contains five sections. The first section is introduction of the system that will be introduced; follow by the problem statement. Next are the objectives where the project's goal is determined which related to the problem statement. After that are the scopes of the system and lastly is the thesis organization which briefly describes the structure of this thesis.

#### 1.1 Introduction

Performance evaluation is very important where every semester in our student's life, performance evaluation will take part. Starting with University's life, student being expose to see and know their performance evaluation. They must look at their carry marks in order to get the spirit to do the best for their final examination or do wise plan, so that the results for final will be higher than what they are expected and overall marks will be evaluate carefully through the system that have been provided. Then continue with the real life where they must perform their best works in every semester.

Online Student Performance Evaluation is an online web based application that manages all student marks of Faculty System Computer and Software Engineering (FSKKP) at University Malaysia Pahang (UMP). UMP operator only has manual entry into database. There also has a single entry at a time and unformatted data stored. So, this system which is using z mainframe will be developing to overcome these problems.

There are substantial differences of structure between the mainframe and other platforms, beginning with a flat file naming system that uses catalogs instead of directories. Then there the features all platforms share that are named a little differently. For instance, a mainframe has address spaces instead of processes, and tasks in lieu of threads. Finally, there are the unique concepts, such as a job entry subsystem, along with its host of initiators.

By using the system, the performance evaluation process will become smoother. The manual entry will be change to the automated data entry into the database via COBOL. Other than that, unformatted data will become formatted data report stored in an independent flat file as output. This system also can create a batch type input and output. Nowadays, the universities had their online performance evaluation students already. Sometimes, there have a lot problems faced. So, at last, they cannot get through in the system. So that, online student performance evaluation in system-z mainframe can help to change the system, make the new system systematically to UMP operator.

Today, the term mainframe can best be used to describe a style of operation, applications and operating system facilities. The z mainframe plays a central role in the daily operations of the world's largest organizations and the daily lives of most people. It is known for its reliability, security and enormous processing capabilities. It is actually designed for processing large scale workloads and serving thousands of users and transactions concurrently. It also managed by highly skilled technical support staff. Everyone has used a mainframe computer at one point or another. It runs a variety of operating systems. It is very suitable to make a change or new system which more systematic and efficient for online student performance evaluation. The result of the student performance evaluation will be released faster. Using this system also can attract more university to do this similar in their online system.

## 1.2 Problem statement

There have a few problems faced in online performance evaluation that have been provided, there are:

1. Manual entry into database
2. Single entry at a time
3. Unformatted data

## 1.3 Objective

The objectives of this online performance evaluation using z mainframe are:

1. To create automated data entry into the database via COBOL.
2. To create a batch type input and output system.
3. To generate a formatted report stored in an independent flat file as output.

## 1.4 Scope

Targeted users of this project are:

- i) Administration Personnel
- ii) Operator (one type of user only)



## 1.5 Thesis Organization

This thesis organization consists of four (6) chapters. Chapter one (1) is introduction which briefly describes and introduces the system. The system is Online Performance Evaluation Students using z mainframe. This is a new system that will be introduced among the university students. The system preliminary shows the basic concept of the system. This introduction also gives a comparison between the old systems which have a lot of problems that students faced and the new system that will be introduced using z mainframe. There have a few objectives that can make the system more efficient than the old one. The concept of the system, problem statements of the system, objectives, scopes and thesis organization must be in this chapter one (1).

Chapter two (2) is literature review which depicts the manual systems and the existing systems as the case studies of this project. This chapter also reviews the technique, method, equipment, and technology that had been used in the case studies. For this chapter, the related information can get via book, internet, article, journal and others.

Chapter three (3) is methodology which discusses about the overall workflow in the development of this project. This chapter also discusses the method, technique or approach that has been used while designing and implementing the project. It also will explain more about the justification of the proposed approach, hardware and software requirements.

Chapter four (4) is implementation. This chapter discusses about the environment and coding used to develop the system. It also contains some of the coding like the engine for the system. Some examples of the coding are Java, C++, COBOL and etc.

Chapter five (5) is result and discussion. This chapter briefly discusses how the system runs. System testing will be showed here if got any error or not. The system must have error handling and user friendly.

Chapter six (6) or the last chapter is conclusion which will summarize the results of this project. It also presents the summarization of project's methodology, implementation that has used, and finally suggestion for possibility to enhance this project for the future research.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter briefly describes the review on existing techniques with online student performance evaluation using z mainframe. This chapter comprises two sections: The first section describes the comprehensive review on existing related systems. The second section describes the review on method, equipment, and technology previously used in the same domain.

#### **2.1 Existing System Review**

This section is to review the current system and the existing system that related to online student performance evaluation. There are three student portals in different universities in order to find out the comparison features in online student performance evaluation between them.

### 2.1.1 Portal University Kebangsaan Malaysia

University Kebangsaan Malaysia (UKM) was the third university to be established in Malaysia. Today UKM is recognized as one of four research universities in Malaysia. UKM offers a wide variety of academic programmes covering both the arts and sciences. This portal provides a lot of facilities to student especially in their academic session which the student information system.

**LOGIN**  
Pengenalan : A128520  
Katalaluan : .....  
Lupa Katalaluan?

**SMPWEB**  
Sistem Maklumat Pelajar

**UNIVERSITI KEBANGSAAN MALAYSIA**  
The National University of Malaysia

Rabu, 2 November 2011 - 9:38:31 Petang

*Kalendar SMP*

**Semester 1 Sesi Akademik 2011-2012**

**Pelajar Ijazah Pertama**

- Gugur/Tambah Kursus mulai 12 Sept 2011 - 25 Sept 2011.
- Gugur Kursus saja mulai 26 Sept 2011 - 9 Okt

**KALENDAR E-PELAJAR E-MEL SPPK ADUAN ICT ADUAN KEWANGAN LAMAN UKM**

**FAQ SMPWEB**

**Sebarang pertanyaan**  
sila e-mel : [smpweb@ukm.my](mailto:smpweb@ukm.my)

**PANDUAN SMPWEB**  
**English Version**  
**Panduan Pakaian**

Pastikan paparan menggunakan **INTERNET EXPLORER** versi 5 dan ke atas, dengan Resolusi 800 x 600 |  
Hakcipta Terpelihara Pusat Teknologi Maklumat, UKM © 2007

**Figure 2.1:** View of homepages for Portal University Kebangsaan Malaysia

**smpweb** SISTEM MAKLUMAT PELAJAR

■Pengenalan ■SMP-WEB ■Hutang Pelajar ■E-Mel Pelajar ■Aduan Pelajar ■Laman UKM

A128520

**PENDAFTARAN**

- Maklumat Biodata Pelajar
- Pendaftaran Kursus Awal
- Daftar Kursus / Gugur Tambah Kursus
- Semakan Rekod Pendaftaran Kursus
- Tarik Diri Kursus
- Pengesahan Borang Pendaftaran Kursus
- Pengesahan Masuk Dan Jadual Peperiksaan

**PEPERIKSAAN**

- Keputusan Peperiksaan**
- Rayuan Semakan Semula Keputusan Peperiksaan

**RENCAM**

- Tukar Katalaluan
- Muat Turun Borang-borang Bhg. Pengurusan Akademik

**PANDUAN PENGGUNAAN SISTEM**

- Daftar Kursus / Gugur Tambah Kursus

**Penyediaan Gambar Bakal Graduan Untuk Sistem Kad Pintar Majlis Konvokesyen**

**BARU** Semua pelajar yang dijangka akan bergraduasi pada September 2011 diminta memuat naik gambar berukuran passport bagi tujuan paparan Majlis Konvokesyen melalui <http://www.ukm.my/konvo> sebelum 30 Jun 2011.

Sila abaikan mesej ini jika saudara/i telah berbuat demikian. Terima kasih.

**Semester 3(b) Sesi 2010-2011**

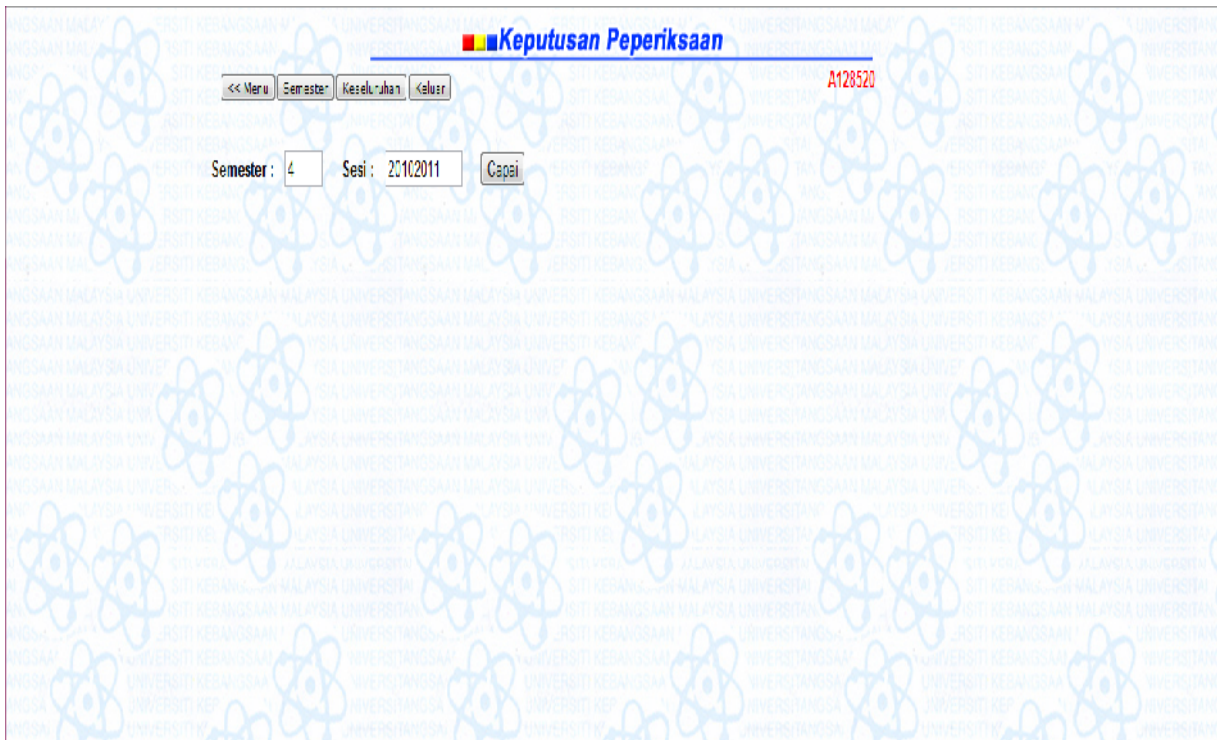
Dimaklumkan bahawa Semester 3(b) Sesi 2010-2011 akan dipaparkan dalam SMPWEB sebagai Semester 4 Sesi 2010-2011.

Dimaklumkan bahawa Sistem ini sedang dalam proses penyelenggaraan. Sekiranya terdapat sebarang ralat (error) semasa menggunakan sistem ini, sila buat laporan melalui [Sistem Pelaporan Kerosakan ICT](#).

**Garis Panduan Pelaksanaan Kokurikulum Berkredit Berasaskan**

**Figure 2.2:** View of the different features in the Portal University Kebangsaan Malaysia






**Figure 2.3:** View of the exam result in each semester

### 2.1.2 Portal University Pendidikan Sultan Idris

University Pendidikan Sultan Idris is a public university which one of the oldest functioning institutions of higher learning in Malaysia. The initial instructional regime required students to complete their learning where traditional skills and arithmetic were taught. This portal also provides a lot of facilities to student especially in their academic session which the student information system will be stated.



**UNIVERSITI  
PENDIDIKAN  
SULTAN IDRIS**  
سولطان ايدريس تعليمات الجامعة  
SULTAN IDRIS EDUCATION UNIVERSITY

**Online Student Services**

Login

Username   
Password

**PROGRAM PENGAJIAN SISWAZAH / POSTGRADUATE**

Takwim Semester II Sesi 2010/2011  
*Schedule for Semester II 2010/2011 Session*

[Carta Alir Pendaftaran Kursus Semester II Sesi 2010/2011](#)  
*Registration Flowchart for Semester II 2010/2011 Session*

[Manual Pendaftaran Kursus Online Semester II Sesi 2010/2011](#)  
*Manual For Online Course Registration Semester II 2010/2011 Session*

**IJAZAH SARJANA MUDA PENDIDIKAN / DEGREE**

[Jadual Pendaftaran/Pra-Pendaftaran Kursus Semester 2 Sesi 2010/2011](#)  
*Registration/Pre-Registration Schedule for Semester 2 2010/2011 Session*

[Carta Alir Pendaftaran/Pra Pendaftaran Kursus Semester 2 Sesi 2010/2011](#)  
*Registration/Pre-Registration Flowchart for Semester 2 2010/2011 Session*

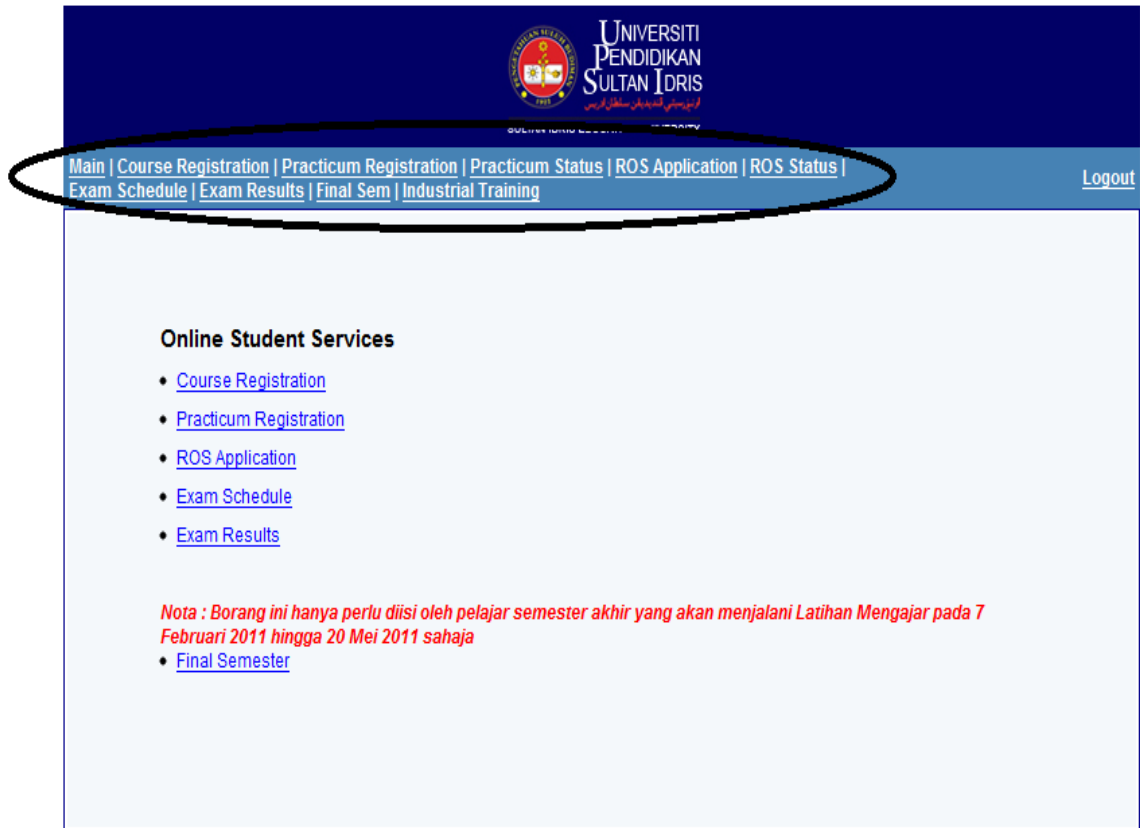
[Panduan Pengguna Pendaftaran/Pra-Pendaftaran Kursus Online Semester 1 Sesi 2010/2011](#)

[Panduan Pengguna Slip Menduduki Peperiksaan](#)  
*User Manual Exam Seating Slip*

**DIPLOMA PENDIDIKAN / DIPLOMA**

[Panduan Pengguna Slip Menduduki Peperiksaan](#)  
*User Manual Exam Seating Slip*

**Figure 2.4:** View of homepages for Portal University Pendidikan Sultan Idris



**Figure 2.5:** View of the different features in the Portal University Pendidikan Sultan Idris



**Figure 2.6:** View of the exam result in each semester

### 2.1.3 Portal University Malaysia Pahang

University Malaysia Pahang was established as a public technical university by the Malaysian government. UMP was set up as a competency-based technical university, specializing in engineering and technology. This portal also provides a lot of facilities to student especially in their academic session which the student information system will be stated.

The screenshot displays the official website of Universiti Malaysia Pahang (UMP). The header contains a navigation menu with links to various university departments and services. Below the header, there's a prominent banner for housing services, followed by a section for the Vice-Chancellor's speech. The main content area is divided into several sections, including a list of news items under 'Berita Utama' and a sidebar with links to various university services. The bottom of the page features sections for 'Capaian Sokongan', 'Aplikasi Atas Talian Umum', and 'Persatuan'.

Figure 2.7: View of homepages for Portal University Malaysia Pahang